COMPLEMENTARITY IN MARRIAGE: EVIDENCE FROM PERCEPTION AND BEHAVIOR AND ASSOCIATIONS WITH INTERACTION AND RELATIONSHIP OUTCOMES

by

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STATEMENT OF THESIS APPROVAL

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ABSTRACT

The principle of complementarity, as applied to the Interpersonal Circumplex, states that behaviors along the affiliation dimension "pull" for correspondence (i.e., match) from interaction partners, while behaviors along the control dimension pull for reciprocity (i.e., opposite). Interpersonal theory further proposes that complementary interactions are associated with less anger and anxiety, as partners' interpersonal stances are affirmed, and that this reduction in negative affect makes relationship satisfaction and continuance more likely. The present studies examined the presence of complementarity as well as proposed affective and relationship correlates of complementarity in the important context of marriage while appropriately accounting for first-order effects of affiliation and control in relation to these outcomes. We examined aggregate behavioral complementarity and its correlates using multiple methods of assessment (e.g., self-reports, observer ratings, partner ratings). We also examined potential contextual moderators such as the tone and focus of marital interactions. While we found strong support for affiliative complementarity, the presence of complementarity along the control dimension was less reliable. Additionally, results revealed that first-order effects of affiliation and control predicted affect and relationship quality, not complementarity (e.g., match or mismatch of these behaviors).

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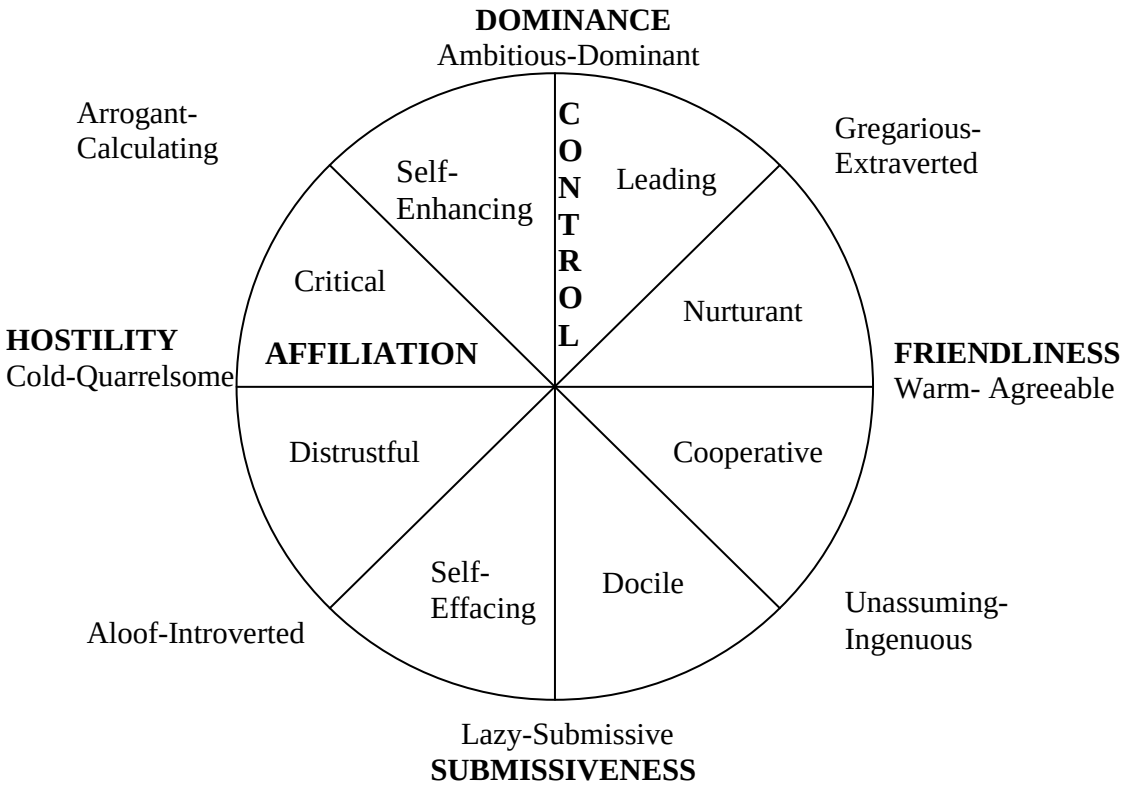
CHAPTER I

INTRODUCTION

Evidence that our behavior influences and is influenced by the behavior of others is found throughout social, personality, and developmental psychology (Caspi, 2000; Mischel & Shoda, 1995; Snyder, 1983); the individual's momentary responses and more enduring dispositions shape and are shaped by the social environment. In interpersonal theory (Carson, 1969; Horowitz et al., 2006; Kiesler, 1983; Leary, 1957; Pincus & Ansell, 2003; Wiggins, 1982) the principle of complementarity is an important example of this reciprocal causal process. There are several specific models of complementarity (Benjamin, 1974; Kiesler, 1996; Tracey, 2001), but the most widely studied form describes behavior as varying along the dimensions of affiliation (i.e., warm, friendly vs. cold, hostile) and control (i.e., dominant, directive vs. submissive, yielding), which define the interpersonal circumplex (IPC), as depicted in Figure 1 (Panel A) (Kiesler, 1983; Leary, 1957). The complementarity principle holds that an actor's behavior invites or evokes responses from partners that are *similar* in affiliation and *opposite* in control (see Figure 1, Panel B). Hence, warmth invites warmth, hostility invites hostility, dominance invites submission, and submission invites dominance (Carson, 1969; Sadler, Ethier, & Woody, 2011).

A. The Interpersonal Circumplex



B. Predicted Complementary Associations

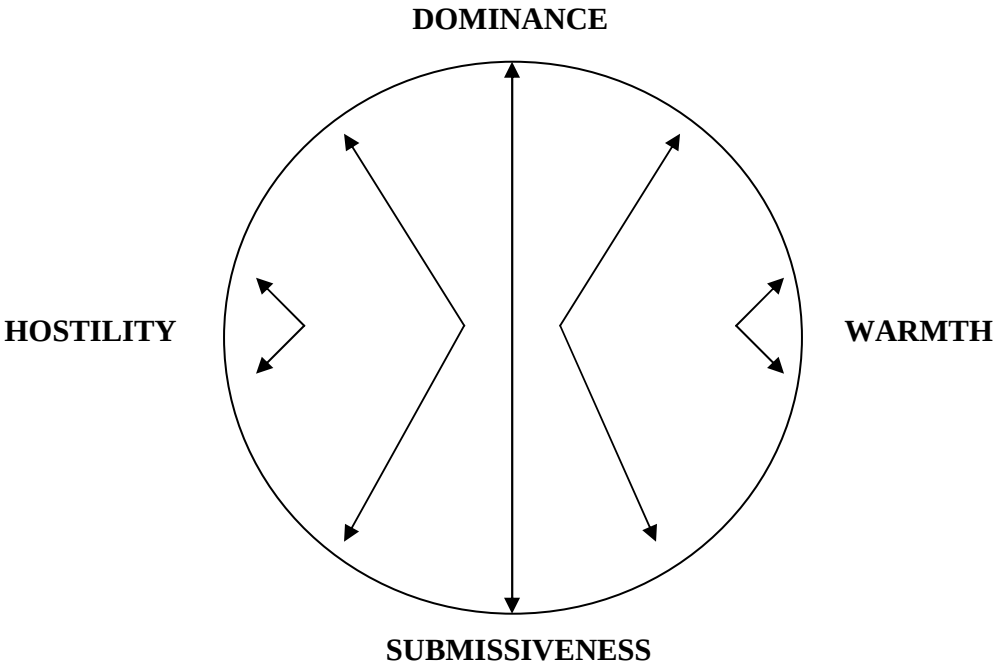


*Figure 1.*The IPC and predictions of the principle of complementarity

In interpersonal theory, the complementarity principle describes not only expected patterns of behavior, but also the likely outcomes of social interactions. Specifically, greater complementary is hypothesized to lead to lower negative affect (e.g., anxiety, anger, and frustration) and increased satisfaction and continuance, in both individual social interactions and on-going social relationships (Carson, 1969; Horowitz et al., 2006; Kiesler, 1996; Sadler et al., 2011).

The Special Case of Marriage

The presence and effects of complementarity are often examined during friendly interactions between unacquainted and nonromantic dyads (Sadler et al., 2011). However, interpersonal theorists have suggested that complementarity is especially applicable to interactions with significant others (e.g., Kiesler, 1983, p. 198). Surprisingly, however, little research has examined complementarity in what for many adults is their most important personal relationship – marriage. Only two studies have examined complementarity in romantic dyads, and these studies examined only personality traits reflecting affiliation and control (i.e., interpersonal styles), not contextualized behaviors, and have yielded inconsistent results. One study found that complementarity in interpersonal styles was associated with better relationship quality (Markey & Markey, 2007), whereas the other found that complementarity was associated with divorce (Tracey et al., 2001).

Marital quality and stability have important effects on physical and emotional health (Keicolt-Glaser & Newton, 2001; Whisman, Sheldon, & Goering, 2000), and theory and research on complementarity could further our understanding of the

determinants and consequences of marital interaction patterns, thus potentially informing interventions.

Competing Predictions

As stated, some influential interpersonal theorists predict that correspondence on the IPC affiliation axis and reciprocity on the control axis will result in decreased negative affect and positive interaction and relationship outcomes (e.g., satisfaction; Carson, 1969; see Sadler et al., 2011 for a review). However, marital research findings from other conceptual traditions (e.g., Gottman, 1979) differ from this prediction in important ways.

For example, though both complementarity theorists and prior theory and research on marriage (Fincham & Beach, 1999; Gottman, 1979; Snyder et al., 2005) predict positive outcomes when both partners are warm (i.e., correspondingly high levels of affiliation), predictions diverge when we consider the complementary pattern of two partners who are hostile or unfriendly (i.e., correspondingly low levels of affiliation). Though the partners complement one another's low warmth, high levels of hostility by both partners is consistently associated with distress, dissatisfaction, and disruption in marital research (Fincham & Beach, 1999; Gottman, 1979; Snyder et al., 2005), not higher probability for continuation or decreased negative affect as suggested by complementarity theory.

These differing predictions can be translated directly into precise statistical effects. Specifically, theory and research on marital behavior indicate that higher *levels* of affiliation should be associated with more positive outcomes, suggesting that the first-

order effects of partners' levels of affiliation will be related to marital interaction and relationship outcomes (e.g., affect and relationship quality, respectively). In contrast, theory and research on complementarity predict a statistical, "cross-over" interaction pattern in which correspondence in spouses' levels of affiliation predict positive outcomes. That is, positive outcomes are expected when both spouses display similar levels of affiliation, regardless of whether the behavioral "match" is more or less warm.

Similar logic can also be applied to the control dimension of the IPC. Specifically, prior marital research indicates that high levels of control from a spouse are often experienced as unwelcome and can be a source of marital dissatisfaction and distress (Ehrensaft et al., 1999; Gray-Little & Burks, 1983; Sanford, 2010), again suggesting that the first-order effects (i.e., partners' levels of control) would predict marital outcomes. In contrast, theory and research on complementarity predict that high levels of control displayed by one spouse are not necessarily related to poor marital outcomes, unless accompanied by high levels displayed by the partner, again suggesting a statistical, "cross-over" interaction pattern in which reciprocity (i.e., opposites) in spouses' levels of control predict positive outcomes.

Differing predictions based on the complementarity principle compared to those based on marital theory and research suggest that this central aspect of interpersonal theory could provide a useful description of processes underlying recurring interaction patterns in marriage, but might not provide an accurate account of marital interaction *outcomes* or overall marital quality.

Evidence for Predicted Patterns and Correlates of Complementarity

In an influential review of studies examining complementarity in previously unacquainted interaction partners and nonromantic dyads (e.g., roommates), Orford (1986) concluded that the evidence for complementarity along the affiliation axis is stronger and more consistent than for the control axis *and* that control complementarity appears to be more likely during friendly interactions. Thus, although there is evidence of complementarity along the control axis (Sadler et al., 2011), its presence is less reliable and appears more context dependent than affiliative complementarity. Hence, examining both dimensions simultaneously is likely to result in a loss of information about which interpersonal invitations are likely to be accepted and in what context.

Also in nonromantic samples, research has found significant support for the idea that greater complementarity is associated with positive relationship outcomes, such as liking, comfort, and satisfaction with the interaction (for a review, see Sadler et al., 2011). However, few studies (for exceptions, see Schechtman & Horowitz, 2006; Svartberg & Stiles, 1992) have tested the proposed correlation between complementarity and affect during social interactions (i.e., lower anxiety and anger), despite the fact that resulting reduction of negative affect is a key tenet of complementarity theory. Specifically, complementary interactions are proposed to potentiate a sense of self-validation and security resulting in a reduction in negative affect (e.g., Carson, 1969; Sullivan, 1953), and this reduction in negative affect is identified as the mechanism through which complementary interactions are sought, reinforced, and maintained.

Statistical Methods and Problems

Many statistical methods have been used to examine complementarity (Ansell, Kurtz, & Markey, 2008; Gurtman, 2001; Strong et al., 1988). The most common approach among studies that have examined complementarity for the two IPC axes separately relies on correlations between the two partners' affiliation and control scores (Markey & Kurtz, 2006; Markey & Markey, 2007; Sadler et al., 2011). Although useful in testing the presence of complementarity, this approach does not permit tests of hypotheses regarding relationship outcomes associated with variations in the *degree* of complementarity. To address this issue, recent studies have quantified the degree of complementarity for individual dyads and then tested the significance of this variable in predicting relationship outcomes. For example, Ansell et al. (2008) found that roommate dyads displaying greater complementarity reported more positive relationship outcomes. Unfortunately, this approach may be problematic in some cases, as scores on a dyadic index of complementarity could be confounded with overall levels of affiliation or control (Kenny & Cook, 1999). If a complementarity index is correlated with levels of affiliation or control, as in our data sets, testing its association with relationship outcomes is akin to testing the statistical interaction representing complementarity without appropriate statistical control of the first-order effects. Further, distinguishing the effects of the interaction from the effects of it's component parts is particularly important to the goals of the current study given that research on marital behavior attributes affective and relationship outcomes mainly to first-order effects (partners' levels of affiliation or control) and complementarity theory attributes these outcomes to the degree of "match" or mismatch between partners (interaction).

A Brief Overview of Pertinent Proposed Moderators of Complementarity

Measurement Moderators

Interpersonal processes involving complementarity can be measured using multiple methods: self-reports, ratings by interaction partners, and ratings by independent observers (Dryer & Horowitz, 1997; Markey et al., 2006; Moskowitz, Ho, & Turcotte-Tremblay, 2007; Tiedens et al., 2007). Variations in method may also influence the observed level of complementarity, with important implications. For example, some research suggests that individuals may be motivated to perceive certain interactions and relationships as complementary along the control dimension (Moskowitz et al., 2007; Tiedens et al., 2007). Hence, levels of complementarity might be particularly strong when individuals rate both their own behavior and the responses of their interaction partners. If so, then complementarity might best describe the appraisal or internal representation of interaction patterns, rather than objective social behavior.

Contextual Moderators

The focus or tone of interactions may also be an important moderator of complementarity. As previously mentioned, Orford (1986) concluded that the level of affiliation (i.e., how warm the interaction was) moderated complementarity along the control axis (i.e., whether or not partners agreed on a leader and follower). Specifically, interaction partners' levels of control were inversely related, as expected, during warm interactions, but positively correlated during hostile interactions. Orford's results suggest that the invitation to lead, follow, submit, etc. is more likely to be accepted during friendly interactions than during unfriendly interactions.

Additionally, structured and task-focused situations appear to attenuate complementarity on affiliation, but promote complementarity on control (Markey, Funder, & Ozer, 2003, Table 4; Moskowitz et al., 2007, Tiendens & Jimenez, 2003). Interaction tasks where participants discuss a topic of personal concern or get to know each other create a less structured and more relationship-focused situation (Markey et al., 2003), whereas solving puzzles or math problems together is more structured and task-focused (Locke & Sadler, 2007; Markey et al., 2003). Marriage incorporates both less structured, relationship-focused interactions, and structured, task-focused contexts, and the presence and correlates of complementarity in marital interactions may well differ by context.

The Present Studies

In the three studies reported here, we extend prior research on complementarity to the context of marriage. We also examine the potential contribution of conceptual models of complementarity to on-going efforts to understand the determinants and consequences of marital interaction patterns. We address several specific issues. First, we examine the extent to which complementarity is present in marital interactions. Second, we examine several potential moderators of the degree of complementarity in marriage, including method of assessment, tone of the interaction, and the type or focus of marital interactions. Third, we examine whether complementarity is associated with more desirable affective and relationship outcomes as suggested by interpersonal theory, after appropriately accounting for the first-order effects of levels of affiliation and control; and examine whether these outcomes are better explained by a complementarity interaction

on affiliation and control (i.e., a cross-over interaction), other forms of interactions, or simply higher levels of affiliation and lower levels of control.

CHAPTER II

STUDY 1: INTERACTION VALENCE AS A MODERATOR OF COMPLEMENTARITY IN AFFILIATION AND CONTROL, AND ASSOCIATIONS WITH RELATIONSHIP OUTCOMES

Introduction

As described above, complementarity in affiliation is often more evident than is complementarity in control, although no prior studies have tested this pattern in the context of marriage. Further, prior evidence (Orford, 1986) suggests that complementarity in control is more evident in friendly interactions, whereas hostile interactions might actually foster anticomplementarity (e.g., contested control). Interpersonal theory predicts that specific patterns of affiliation (i.e., correspondence) and control (i.e., reciprocity) predict less negative affect during marital interaction, and higher overall relationship quality, whereas other theory and research (Fincham & Beach, 1999; Gottman, 1979; Sanford, 2010; Snyder et al., 2005) suggest that overall levels of affiliation and control account for most, if not all, of the variance in partners' affective and relationship outcomes.

We tested these predictions in additional analyses of a previously reported study of young married couples (Nealey-Moore, Smith, Uchino, Hawkins, & Olson-Cerny,

2007). In an initial task, couples were assigned to a positive, neutral, or negative marital discussion, and rated their partner's levels of affiliation and control during the task. This provided the opportunity to test the presence and relative magnitude of complementarity in affiliation and control, as well as the role of interaction valence as a moderator of complementarity. All couples then discussed a topic of marital disagreement and completed both self-reports and partner ratings of affiliation and control during this task. They also provided self-reports of anger and anxiety during the task, and reports of overall marital quality. Thus, the second task provided an additional opportunity to examine the presence and relative degree of complementarity in affiliation and control, and an opportunity to examine different methods of assessment (i.e., self-reports vs. partner ratings) as an influence on the degree of complementarity observed. The disagreement task also provided an opportunity to examine whether affective and relationship outcomes are best explained by complementary behaviors, after appropriately accounting for the first-order effects of partners' levels of affiliation and control, or whether these first-order effects themselves, and not complementarity, better account for outcomes.

Method

Participants

The sample consisted of 114 younger, heterosexual couples (see Nealey-Moore et al. 2007, for details of method). The mean age for men was 30.1 years and 28.5 years for women. Most couples had been married 1-3 years (52.1%), and all couples had been married more than 9 months.

Procedure

Each couple participated in two experimental tasks, separated by a 10 minute resting interval. In the first, couples were randomly assigned to a positive, neutral, or negative initial task condition and then subsequently took part in a disagreement discussion. Couples in the positive condition took turns describing characteristics they appreciated about each other, and in the negative condition spouses took turns describing traits that they disliked about each other; and in the neutral condition couples were asked to describe their partner's typical daily schedule. In the subsequent disagreement discussion participants took turns speaking and listening while discussing a current point of contention in the relationship, and then continued to discuss the topic for an additional 4 minutes in an unstructured format.

Measures

Behavior

Participants provided ratings of their spouse's affiliation and control during each interaction (i.e., *partner ratings*) using the Impact Message Inventory-Circumplex (IMI-C; Kiesler, Schmidt, & Wagner, 1997). The IMI-C is a 32-item measure, comprising eight 4-item subscales corresponding to IPC octants (Figure 1). Scores for affiliation and control were created through weighted combination of the subscales. This measure has been shown to have the predicted circumplex structure, dimension scores that are internally consistent and valid (Schmidt, Wagner, & Kiesler, 1999), and is sensitive to manipulations of tone in marital interaction (e.g. Nealey-Moore et al., 2007; Smith et al., 2009a). Participants also rated their own behavior (i.e., self-reports) using the

Interpersonal Adjective Scales (IAS-R; Wiggins, 1995; Wiggins, Trapnell, & Phillips, 1988), but only during the disagreement task. The IAS-R consists of 64 items assigned to one of eight scales corresponding to the IPC octants, and has been shown to have the predicted circumplex structure in previous research (Markey et al., 2007).

Affect

Measures of state anxiety and anger were completed immediately after baseline periods and the interaction tasks, using a 12-item inventory (Nealey-Moore et al., 2007) inquiring about affect during the preceding baseline or interaction task. Each scale includes 4 positively worded items (e.g., "I feel irritated") and 2 negatively worded items (e.g., "I feel friendly"). Both subscales have been found to be reliable (Cronbach's alpha > .80) and sensitive to experimental manipulations in the current sample (Nealey-Moore et al., 2007).

Relationship Quality

To assess relationship quality, participants completed the Locke-Wallace Marital Adjustment Test (MAT; Locke & Wallace, 1959), a widely used 15-item scale that has been found to be reliable and valid (Kimmel & VanderVeen, 1974). Participants also completed the Support and Conflict subscales of the Quality of Relationships Index (QRI; Pierce, Burleson, Albrecht, & Sarason, 1994) and the Social Relationships Inventory (SRI; Uchino, Holt-Lunstad, Uno, & Flinders, 2001), which measures positive and negative qualities of the relationship (Campo et al., 2009). Scores on these scales were factor analyzed (i.e., principle components analysis), producing a one-factor solution (i.e., one eigenvalue greater than 1.0) for both husbands and wives. Loadings for all

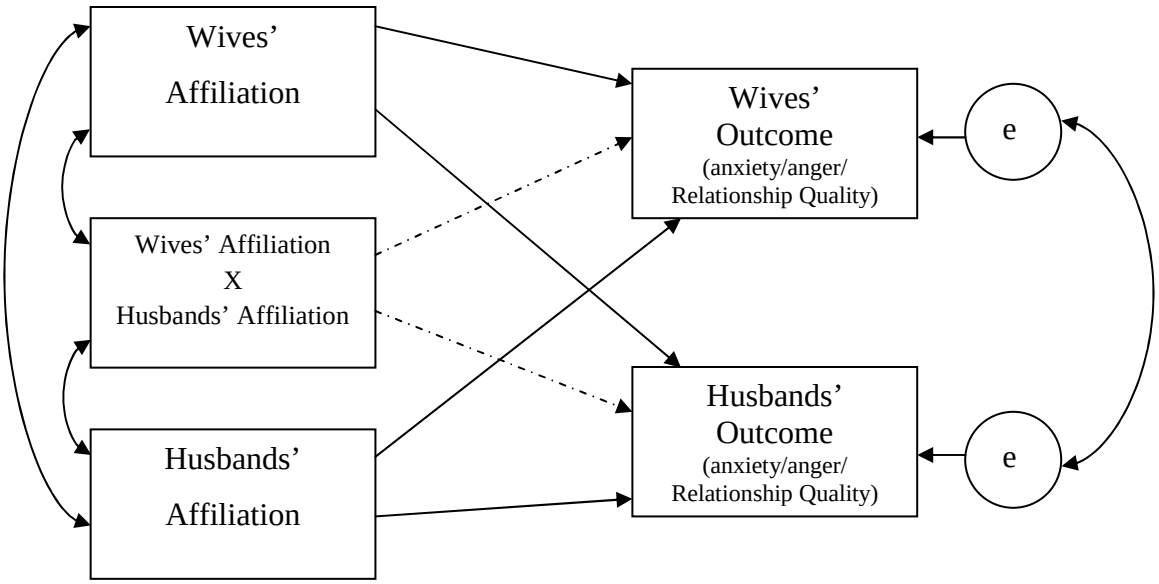
variables on the factor we will call *Relationship Quality* had an absolute value of .80 or greater for both men and women. Scores were created through unit weighting.

Overview of Analyses

In order to examine complementarity for affiliation and control separately, correlations between husbands' and wives' scores on these dimensions were computed. Positive correlations for affiliation and negative correlations for control are consistent with predictions from interpersonal theory. To test associations of affiliation and control with affect during disagreement and relationship quality, we performed path analyses in Amos 7.0, in order to account for the statistical dependency inherent in dyadic data. We examined the association of spouse's own behavior with his or her own outcomes (i.e., actor effects) as well as his or her partner's outcomes (i.e., partner effects). Using the model comparison approach (Bollen, 1989) to determine if complementarity was associated with these outcomes, we first tested a constrained model that included only the first-order effects (i.e., levels) of actor and partner affiliation and control, and then tested a full model that included the additional effects of interactions terms (i.e., wife affiliation x husband affiliation, wife control x husband control), which could either represent complementarity or another form of interaction. All predictors were centered prior to calculation of product terms and inclusion in analyses.

Figure 2 is a visual representation of the model comparisons performed here. As outlined previously, the rationale for this comparison is that interpersonal theory predicts a specific, cross-over interaction between two individuals' levels of affiliation or control in predicting relationship outcomes. However, past research on marital behavior suggests

A. Affiliation Dimension



B. Control Dimension

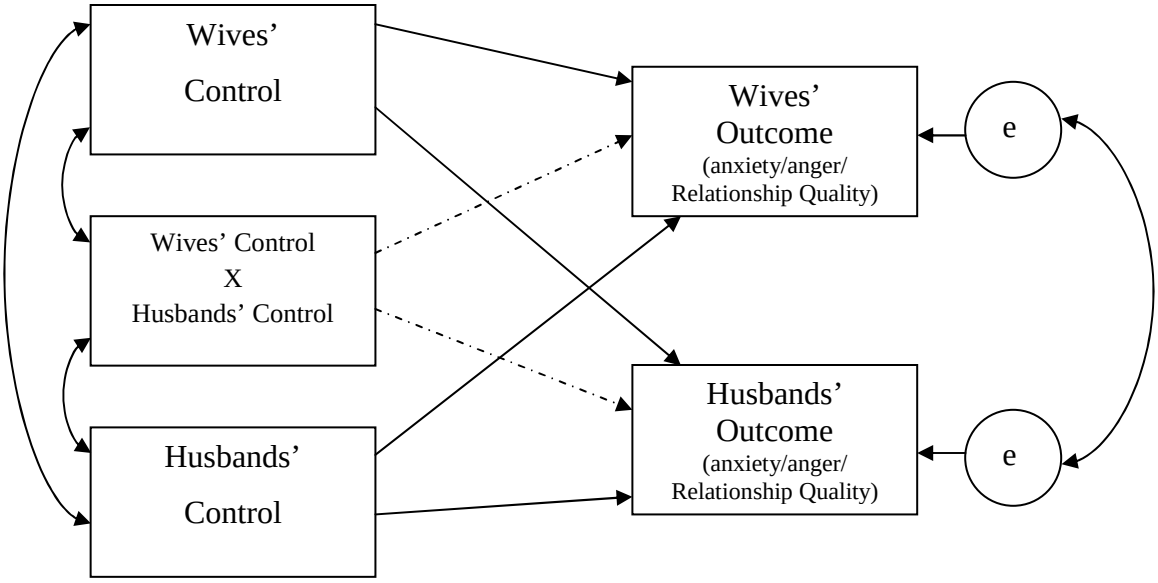


Figure 2. Structural equation models. Effects for affiliation and control were modeled separately. Paths marked with dotted lines were fixed to zero in the constrained model (i.e., first-order effects only model), and were allowed to be estimated in the full model.

a different pattern of associations in which first-order effects account for most, if not all, of the variance in partners' outcomes. Further, complementarity has often been tested separately from these first-order effects, leaving it unclear whether complementarity has incremental effects beyond simple levels of control and affiliation. Again, we tested control and affiliation separately as past research suggests they are differentially reliable and context dependent and this separation of axes also provides the most sensitive test of the interaction term for each axis (fewer degrees of freedom between models and thus less increase in variance necessary for differences between models), and eliminates the potential problem of statistical overlap between the two interaction terms.

If no significant difference is found between the constrained and full models, this indicates that the additional paths (i.e., interactions) *potentially* reflecting complementarity do not account for relationship outcomes above the first-order effects of affiliation and control. However, if the full model does show significantly better fit, it is imperative to determine if the interaction effects take the form specified by the complementarity principle, as opposed to other patterns. For example, these interactions may be due to synergism (e.g., low levels of warmth by both partners may be detrimental over and above their additive effects) of partners' behavior, and not match or mismatch of behavior. Hence, it is necessary to examine the shape of significant interactions, and not simply superiority of model fit, as complementarity suggests a specific, cross-over interaction, and other interactions are certainly possible.

Lastly, though somewhat counterintuitive, significant interactions could occur in the full model even when the full model does not result in significantly better fit to the data, indicating that the interaction is a significant predictor but does not account for a

statistically significant increase in outcome variance. Thus, to provide the most sensitive tests of any possible indications of associations between complementarity and relationship outcomes, all significant interaction paths were graphed and simple slopes tested (at the mean as well as one standard deviations above and below the mean). Missing data were estimated using Full Information Maximum Likelihood (FIML) as we had less than 5% missing data (Graham, 2009). Statistics reported for a given model or association reflect statistics from the best fitting model for that respective outcome (see Table 1).

Results

Is There Evidence of Complementarity in Spousal Interactions?

Initial Task

Examining correlations between partner ratings of behavior (i.e., IMI-C control and affiliation scores) in each initial task condition (i.e., positive, neutral, negative), we found significant control complementarity, but not affiliative complementarity, in the positive condition [$r(36) = -.44$, $p < .01$], only affiliative complementarity in the neutral condition [$r(36) = .44$, $p < .01$], and affiliative complementarity [$r(36) = .58$, $p < .001$] as well as significant, anticomplementarity along the control axis [$r(36) = .46$, $p < .01$) in the negative condition (see Figure 3, Panel A).

Table 1. Results of model comparisons and effect sizes for each outcome of interest in Study 1 based on ratings of behavior

Method of Assessment & Outcome	R^2 Constrained Model	R^2 Full Model	R^2 Δ	Model Comparison Results (χ^2 difference)	*p*
Affiliation Dimension					
Partner Ratings (IMI-C)					
Husband anxiety	.05	.08	.03	4.6	> .05
Wife anxiety	.18	.21	.03		
Husband anger	.17	.20	.03	7.9	**< .05**
Wife anger	.41	.45	.04		
Husband RQ	.25	.28	.03	7.2	**< .05**
Wife RQ	.38	.38	0		
Self-Reports (IAS-R)					
Husband anxiety	.07	.08	.01	3.8	> .05
Wife anxiety	.13	.16	.03		
Husband anger	.16	.16	0	2.1	> .05
Wife anger	.28	.30	.02		
Husband RQ	.10	.13	.03	4.1	> .05
Wife RQ	.13	.15	.02		
Control Dimension					
Partner Ratings (IMI-C)					
Husband anxiety	.13	.13	0	0.4	> .05
Wife anxiety	.22	.23	.01		
Husband anger	.23	.23	0	0.1	> .05
Wife anger	.33	.33	0		
Husband RQ	.15	.15	0	4.99	> .05
Wife RQ	.20	.22	.02		
Self-Reports (IAS-R)					
Husband anxiety	.10	.11	.01	2.9	> .05
Wife anxiety	.05	.05	0		
Husband anger	.04	.04	0	3.5	> .05
Wife anger	.01	.03	.02		
Husband RQ	.02	.06	.04	5.8	> .05
Wife RQ	.05	.08	.03		

RQ = Relationship Quality. *p*-values less than .05 indicate incremental utility of the additional interaction paths above first-order effects of affiliation and control

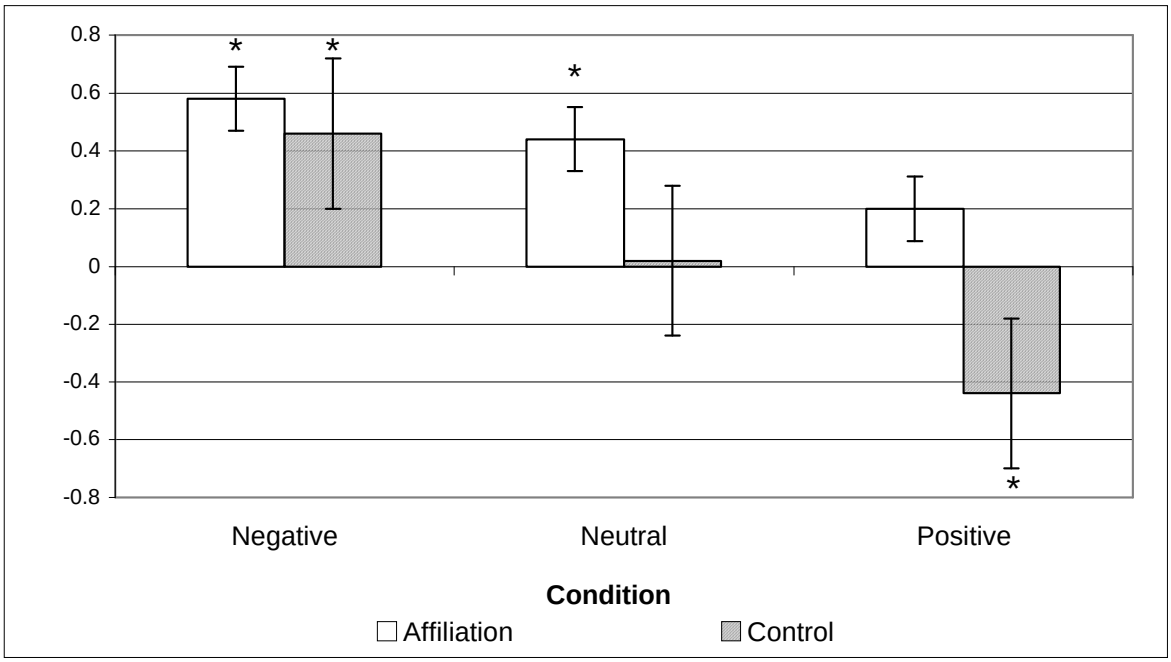
Disagreement Task

Examining self-reports of behavior during the disagreement task (i.e., IAS-R affiliation and control scores) we found no evidence of complementarity along the control axis [r (112) = .05, p > .05] but significant affiliative complementarity [r (112) = .40, p < .001]. In terms of partner ratings (i.e., IMI-C ratings of partner affiliation and control) we found both strong affiliative complementarity [r (112) = .55, p < .001] and significant anticomplementarity on control [r (112) = .19, p < .05]. When we examined husbands' perceptions only (i.e., his IAS-R report of his own behavior and his IMI-C rating of the wife's behavior) and wives' perceptions (i.e., her IAS-R report of her own behavior and her IMI-C rating of the husband's behavior), we found that both husbands and wives perceived strong affiliative complementarity [r (112) = .53 and .60, respectively, both p < .001] but neither perceived significant complementarity on control [r (112) = .02 and -.16, respectively, both p > .05]. For a visual representation see Figure 3, Panel B.

Is Complementarity Moderated by Warmth or Method of Assessment?

As reported above, during the initial task, correlations between husbands' and wives' ratings of their spouse's control revealed complementarity only for the positive condition, no complementarity during neutral interactions, and anticomplementarity during negative interactions (see Figure 3, Panel A), suggesting that control complementarity may be moderated by warmth of the interaction. During the disagreement task, only partner ratings revealed significant anticomplementarity in control and no method resulted in significant control complementarity, though all methods revealed significant affiliative complementarity (see Figure 3, Panel B).

Panel A: Moderation by Tone/Warmth



Panel B: Moderation by Method of Assessment

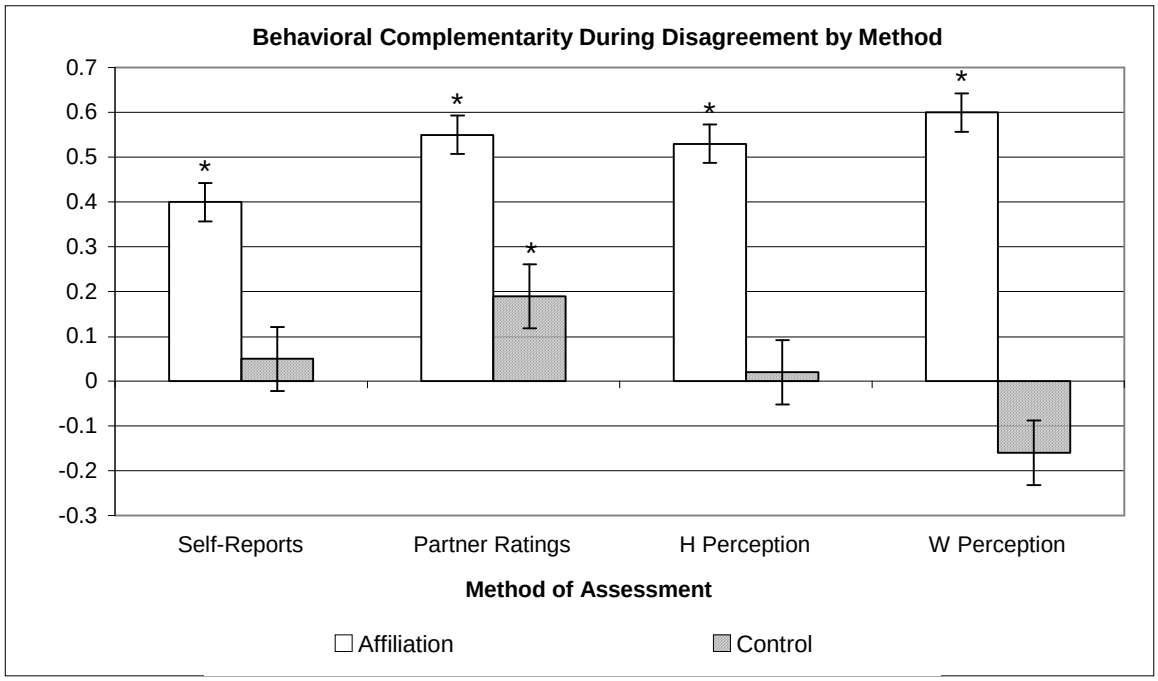


Figure 3. Evidence of moderation of complementarity in Study 1: Tone and Method

Do Partners' Levels or Patterns of Affiliation and Control

Predict Relationship Outcomes?

Results of all model comparisons are presented in Table 1 along with effect sizes for spouses' outcomes for each model, in order to provide more detail concerning incremental utility. All best-fitting models (whether constrained or full) had at least adequate model fit (RMSEA < .08, CFI > .95). Results below are presented by method of assessment and then organized by dependent variable (anxiety, anger, then relationship quality). Within each dependent variable results are presented by actor, partner, and then interaction effects. For simplicity, significant effects of both dimensions (affiliation, control) are presented together in text, though dimensions were run in separate models as is evident in Table 1 and Figure 2.

Partner Ratings

We first examine partner ratings of behavior during the disagreement task (IMI-C ratings of partner affiliation and control). Results are presented in Table 1. In terms of affiliation, the full model fit the data significantly better for both anger and Relationship Quality, but not anxiety. For control, in no case did the full model fit the data significantly better than the constrained (first-order effects) model.

For anxiety, significant paths indicated that wives rated (i.e., by their husbands) as more controlling during the task also reported more anxiety in response to the task (B = .35, p < .001). Additionally, wives who rated their husbands as warmer during the task reported less anxiety (B = -.46, p < .001) and both husbands and wives who rated their partners as more controlling reported more anxiety (B = .36, p < .001 and B = .26, p <

.01, for husbands' and wives' anxiety, respectively). Despite lack of superior model fit, the interaction between husbands' and wives' affiliation was also significantly associated with wives' anxiety (B = .18, p < .05). However, this interaction was not consistent with predictions based on the complementarity principle, and instead shows that wives rated by their husbands as low on affiliation may be particularly sensitive to low affiliation by their husbands and that wives with high affiliative husbands actually report more anxiety when they are also rated as high on affiliation (see Figure 4, Panel A). Hence both complementary matches (both partners low on affiliation or both partners high on affiliation) were associated with higher, not lower, levels of anxiety reported by wives.

For anger, significant paths indicated that wives rated as more controlling during the task reported more anger in response to the task (B = .48, p < .001). Additionally, husbands who rated their wives as less warm or more controlling also reported more anger (B = -.26, p < .01 and B = .48, p < .001, respectively), as did wives who rated their husbands as less warm or more controlling (B = -.58, p < .001 and B = .24, p < .01). The interaction between husbands' and wives' affiliation was also significantly associated with both partners' anger (B = .18, p < .05 and B = .21, p < .01, for husbands and wives, respectively). For wives, the pattern closely resembled the pattern for anxiety (see Figure 4, Panel A), and for husbands the interaction represented the synergistic negative effects of low affiliation, such that husbands reported being particularly angry when both husbands and wives rated their spouse low on affiliation (i.e., higher hostility) during the disagreement task (see Figure 4, Panel B).

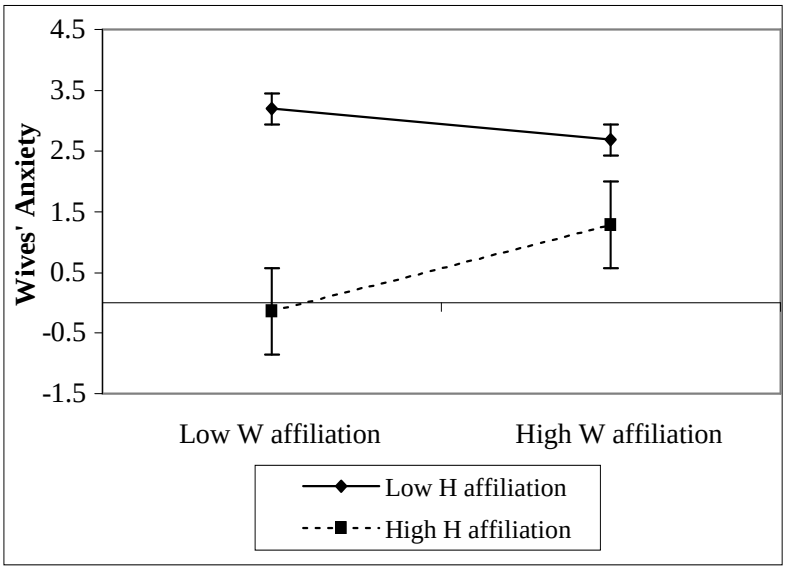
For relationship quality, wives rated as more affiliative during the disagreement

task reported better relationship quality (B = .24, p < .01) as did husbands and wives who were rated as less controlling (B = -.19, p < .05 and B = -.28, p < .001, respectively). Additionally, both husbands and wives who rated their spouse as more affiliative also reported better relationship quality (B = .35 and .45, respectively, both p < .001) as did husbands and wives who rated their spouse as less controlling (B = -.30 and -.29, respectively, both p < .001). The interaction between husbands' and wives' affiliation was also associated with both husbands' and wives' relationship quality (B = -.19 and .18, respectively, both p < .05). For husbands, this interaction represented the synergistic negative effects of low affiliation, such that husbands reported particularly low relationship quality when both husbands and wives rated their spouse low on affiliation during the disagreement task (see Figure 4, Panel C). For wives, the interaction represented the synergistic, positive effects of low control, such that wives reported particularly high relationship quality when both spouses were rated as uncontrolling by their partners (see Figure 4, Panel D).

Self-Reports

Examining self-reported behavior during the disagreement task, in no case did the full model fit the data better than the first-order effects only model (see Table 1). Results for anxiety revealed that wives who reported less affiliation or more control during the task also reported more anxiety in response to the task (B = -.36, p < .001 and B = .22, p = .01 respectively). However, husbands who reported more control reported *less* anxiety (B = -.21, p = .01). Additionally, wives who reported more control during the task were more likely to have a husband who reported greater anxiety in response to the task (B =

Panel A: Partner Ratings



Panel B: Partner Ratings

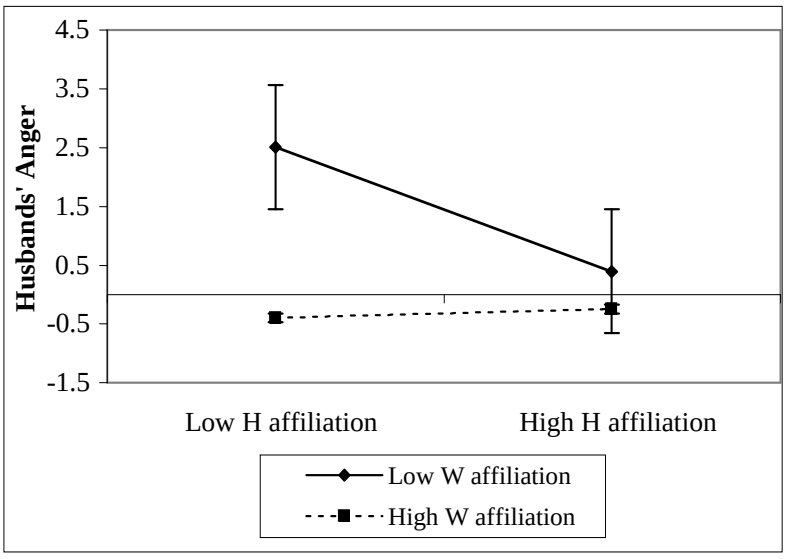
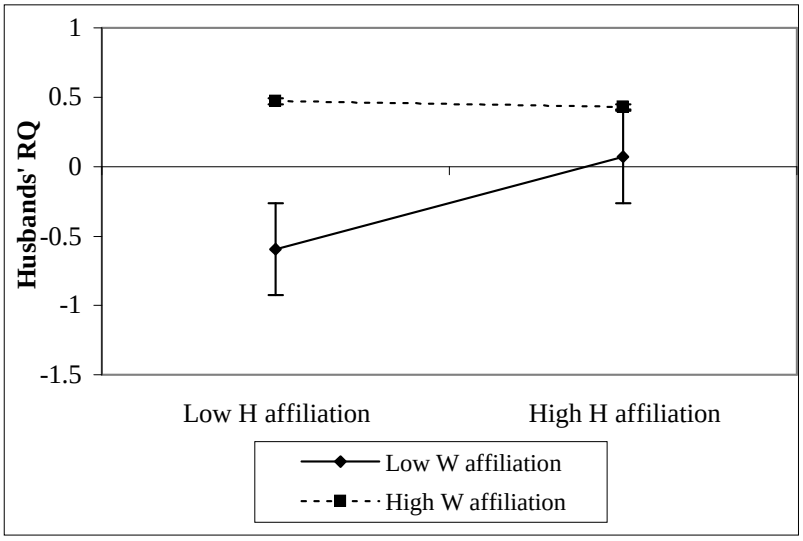


Figure 4. Visual representations of a sampling of significant interactions from the disagreement task in Study 1. The first four panels depict ratings of behavior by partners and the last two panels depict self-reported behavior during the task.

Panel C: Partner Ratings



Panel D: Partner Ratings

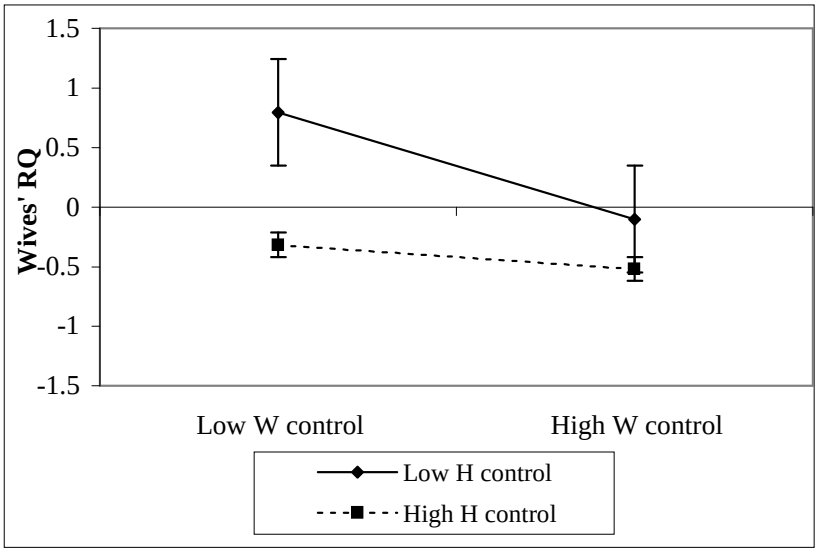
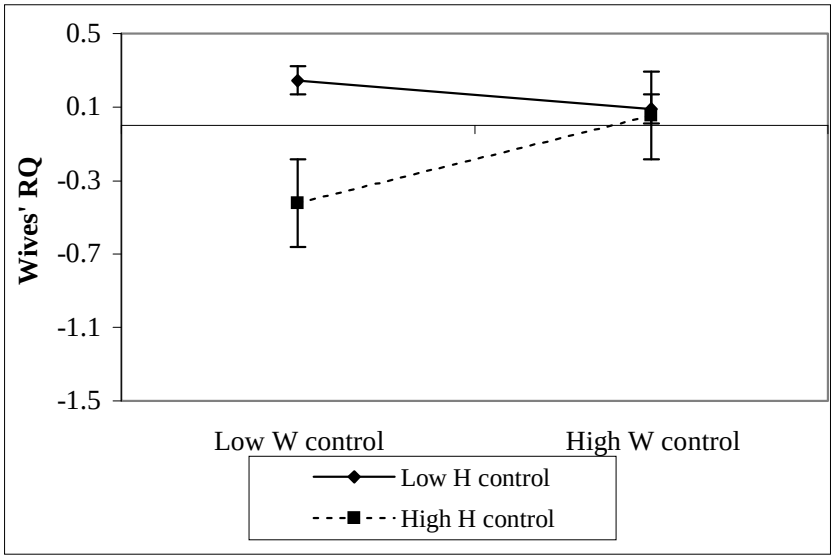


Figure 4. (Continued)

Panel E: Self-Reports



Panel F: Self-Reports

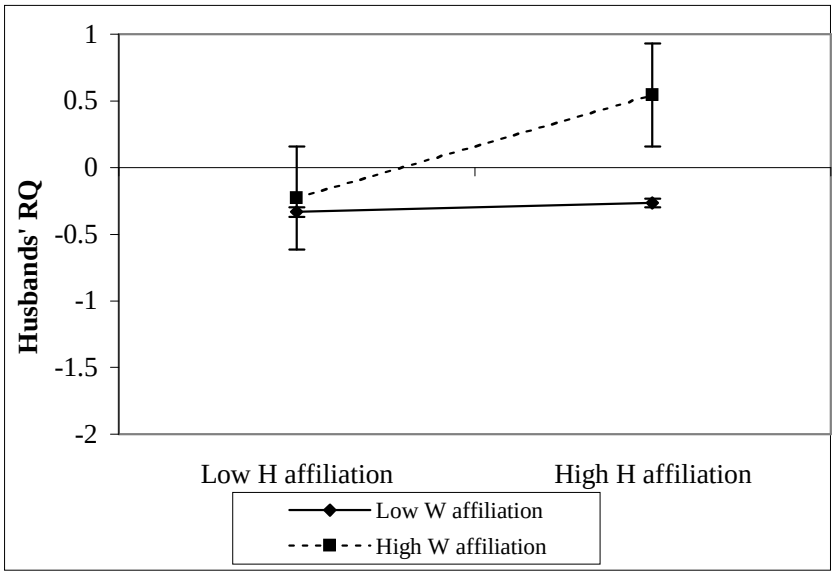


Figure 4. (Continued)

.24, $p < .01$).

Results for anger revealed that both wives and husbands who reported being less warm also reported more anger in response to the task ($B = -.54$, $p < .001$ and $B = -.30$, $p = .001$, respectively). Additionally, husbands whose wives reported behaving in a more controlling manner also reported more anger ($B = .18$, $p < .05$).

Results for relationship quality revealed that both wives and husbands who reported more affiliation during the disagreement task also reported better overall relationship quality ($B = .35$, $p < .001$ and $B = .22$, $p < .05$). Additionally, wives whose husbands reported being more controlling during the interaction also reported worse relationship quality ($B = -.18$, $p < .05$). The interaction between husbands' and wives' control was also significantly associated with both partners' relationship quality ($B = .21$ and .19, respectively, both $p < .05$). However, these interactions did not represent relationships consistent with interpersonal theory. Specifically, wives reported significantly *lower* Relationship Quality when husbands rated themselves high on control and wives rated themselves low on control (a complementary pattern), but not when wives rated themselves high on control, during the disagreement task (see Figure 4, Panel E). For husbands, the interaction represents the synergistic positive effects of high affiliation such that husbands report particularly high relationship quality when both they and their wives report behaving warmly during the disagreement task (see Figure 4, Panel F). Though this is partially consistent with complementarity theory, there was no similar benefit to "match" of *low* warmth by both partners, which would also be predicted by complementarity theory.

Single Source Ratings

When considering complementarity as assessed by participants' ratings of both their own and their spouses' behavior, we again found that although some full models (including the interaction terms) fit the data better than their respective first-order effects only model, no interactions were consistent with predictions based on complementarity theory. Similar to results for partner rating and self-report models described above, significant first-order effects revealed that higher levels of affiliation were associated with lower levels of anger, anxiety and higher Relationship Quality; whereas higher levels of control were associated with higher levels of anger and anxiety and lower Relationship Quality. No significant interactions took the form predicted by complementarity; hence, complementary interactions were not significantly associated with less anger and anxiety or better relationship quality. Instead, levels of affiliation and control (i.e., first-order effects), and at times synergism of these first-order effects, accounted for differences in couple reported affect during the interaction and overall relationship quality.

Discussion

These results provide evidence that complementarity is present during marital interactions. However, we found no support for the theory that complementarity significantly contributes to affective or relationship outcomes when we appropriately included first-order effects in the analyses.

Consistent with Orford's (1986) review, complementarity was stronger and more consistent for affiliation than control, across both the initial task and the disagreement

task, and across multiple methods of assessment (self-reports, partner ratings, perceptions). Also consistent with Orford's (1986) conclusion that control complementarity is more likely during more affiliative interactions, we found that during the initial task, control complementarity occurred in the positive interaction, whereas anticomplementarity in control occurred in the negative task. The latter could reflect contested control or dominance during negative couple interactions (e.g., both want to lead and neither wants to follow).

In terms of the proposed affective and relationship correlates of complementarity, though some models including interactions fit the data better (Table 1) and some interactions between spouses' levels of affiliation or control were significantly associated with outcomes, none of these interactions reflected the pattern predicted by complementarity theory, and many represented patterns of associations in which complementarity was associated with less desirable outcomes (Figure 4, Panels A – E). Instead, higher levels of affiliation and lower levels of control were associated with less anger and anxiety and better Relationship Quality. Significant interactions at times represented the synergistic, negative effects of low affiliation (e.g., Figure 4, Panels B and C) as well as the synergistic, positive effects of high affiliation (e.g., Figure 4, Panel F). One interaction also represented the synergistic positive effects of low control by both partners (Figure 4, Panel D). In no case did the interaction show a pattern of associations consistent with complementarity theory, and in some cases complementarity actually led to *less* desirable outcomes (e.g., Figure 4, Panels B and E).

Though a relatively clear pattern of results emerged in this study, there are noteworthy limitations. First, the spousal interactions in this study were somewhat

artificial, especially during the initial task. Even during the more realistic disagreement task participants were initially required to take turns speaking for specific periods of time. Additionally, participants were young and in relatively short-term marriages, and this may affect complementarity (Kiesler, 1983). Further, affiliation and control were measured only through subjective ratings. Hence, questions remain about whether similar results would be found in more naturalistic interactions, longer-term marriages, and in independent ratings of behavior. Lastly, all couples were engaged in relationship-focused interactions, and past research has shown that structured, task-focused interactions may promote greater complementarity in control (Tiedens et al., 2007).

CHAPTER III

STUDY 2: FOCUS OF TASK AS A MODERATOR OF COMPLEMENTARITY AND ASSOCIATIONS WITH RELATIONSHIP OUTCOMES IN MIDDLE-AGED AND OLDER ADULTS

Introduction

As described previously, variations across interaction contexts that are common in marriage, such as a focus on relationship issues versus everyday tasks, may influence the degree of complementarity during an interaction. Additional analyses of a previously reported study of middle-aged and older married couples (Smith et al., 2009a) provided the opportunity to examine whether complementarity may vary by interaction context as well as address many of the limitations of Study 1. Here we examine couples in longer-term marriages and during more naturalistic interactions. All couples participated in a less structured marital disagreement task, otherwise similar to that used in Study 1, and a task that simulated everyday problem-solving and collaboration in mundane activities (e.g., buying groceries). For both tasks, couples completed partner ratings of affiliation and control, and trained observers also rated each partner's behavior.

Method

Participants

This sample consisted of 300 older and middle-aged couples recruited from the greater Salt Lake City, Utah community (see Smith et al., 2009a). Mean age for husbands was 55.3 years and 53 years for wives. The average length of marriage was 19 years (*SD* = 5.7) for middle-aged couples and 37 years (*SD* = 9.4) for older couples, and all couples were married for a minimum of 5 years. Again, the majority of the sample was Caucasian (Wives, 96.6%; Husbands, 95.8%).

Procedure

Each couple in this sample participated in both a disagreement and a collaborative task. The task order and speaking order (male/female) were counterbalanced. The first 6 minutes of both interactions were unstructured, and only this 6 minutes was coded. The disagreement task was otherwise the same as in Study 1 (Smith et al., 2009a), and the collaboration task required couples to plan the most efficient route and schedule for daily errands.

Measures

Behavior

Participants provided reports of their partner's behavior during each interaction using the IMI-C (described in Study 1), and trained observers provided behavioral codings for each participant using Structural Analysis of Social Behavior (SASB;

Benjamin, 1974; Benjamin, Rothweiler, & Critchfield, 2006). SASB is a refinement of the IPC and predictions concerning complementarity differ considerably between these two theoretical models. However, despite important theoretical differences, dominance, submissiveness, friendliness, and hostility are all assessed in SASB and thus affiliation and control dimension scores that map onto the IPC were calculated and used here for consistency with Study 1. For this study, a SASB-Composite Observational Coding Scheme (SASB-COMP; Florsheim & Benjamin, 2001) was used, in which frequencies for each code for husbands and wives were recorded separately for each minute of the interaction, and for purposes of this study scores were aggregated across minutes for each partner during each task. Additional information on process, training, and reliability of coders can be found elsewhere (Smith et al., 2009a).

Affect

Affect measures of anxiety and anger were reported immediately before and after each interaction, and participants responded to the same 12-item measure described in Study 1.

Relationship Quality

Relationship quality was measured before participants arrived for the laboratory tasks using the QRI support and conflict subscales and the MAT, described in Study 1. In a principal components analysis using these scales, we obtained a one-factor solution (one eigenvalue greater than 1.0) for both women and men. Loadings for all 3 variables on the factor we will again call Relationship Quality had an absolute value of .80 or

greater for both men and women, and again we created relationship quality scores through unit weighting.

Overview of Analyses

We replicated Study 1 by examining whether complementarity is present in marital interactions using correlations, and examined whether complementarity varied by method (i.e., objective ratings of behavior versus partner reports of behavior) or task (i.e., collaboration, disagreement). We also replicated model comparisons performed in Study 1 (Figure 2), to examine whether interactions between spouses' levels of affiliation or control provided incremental utility beyond first-order effects of these dimensions when describing associations with relationship outcomes, and if so whether these interactions represent predictions based on interpersonal theory or another pattern of associations.

Results

Is There Evidence of Complementarity in Spousal Interactions?

Partner Ratings

Examination of partner ratings of behavior during the disagreement task (i.e., IMI-C ratings of partner affiliation and control) indicated significant anticomplementarity on control [$r(298) = .30$, $p < .001$] and strong affiliative complementarity [$r(298) = .60$, $p < .001$]. These results are consistent with those presented in Study 1 for younger couples. However, during collaboration partner ratings indicated significant evidence of both control [$r(298) = -.11$, $p < .05$] and affiliative [$r(298) = .33$, $p < .001$] complementarity.

Observer Ratings

Observer ratings of behavior (i.e., aggregated SASB codes of spouses' control and affiliation) during disagreement indicated no relationship between spouses' controlling behavior [$r(298) = -.04$, $p > .05$] though did show strong affiliative complementarity [$r(298) = .54$, $p < .001$]. However, during collaboration observer ratings of behavior showed significant complementarity along both the control axis [$r(298) = -.20$, $p < .001$] and the affiliation axis [$r(298) = .42$, $p < .001$].

Is Complementarity Moderated by Task or Method of Assessment?

Comparing methods, partner reports indicated anticomplementarity on control during disagreement (Figure 5), whereas observer ratings revealed no significant relationship between partners' levels of control. Control complementarity differed across tasks in that we find at least weak evidence of complementarity during a collaborative, task-focused interaction, but anticomplementarity during a relationship-focused, disagreement interaction (Figure 5).

Do Partner's Levels or Patterns of Affiliation and Control Predict Relationship Outcomes?

Results of all model comparisons are presented in Table 2 along with effect sizes for spouses' outcomes for each model. All best-fitting models showed adequate model fit (RMSEA < .08, CFI > .95). Results below are presented by method of assessment and within method by task (collaboration, disagreement) and then dependent variable

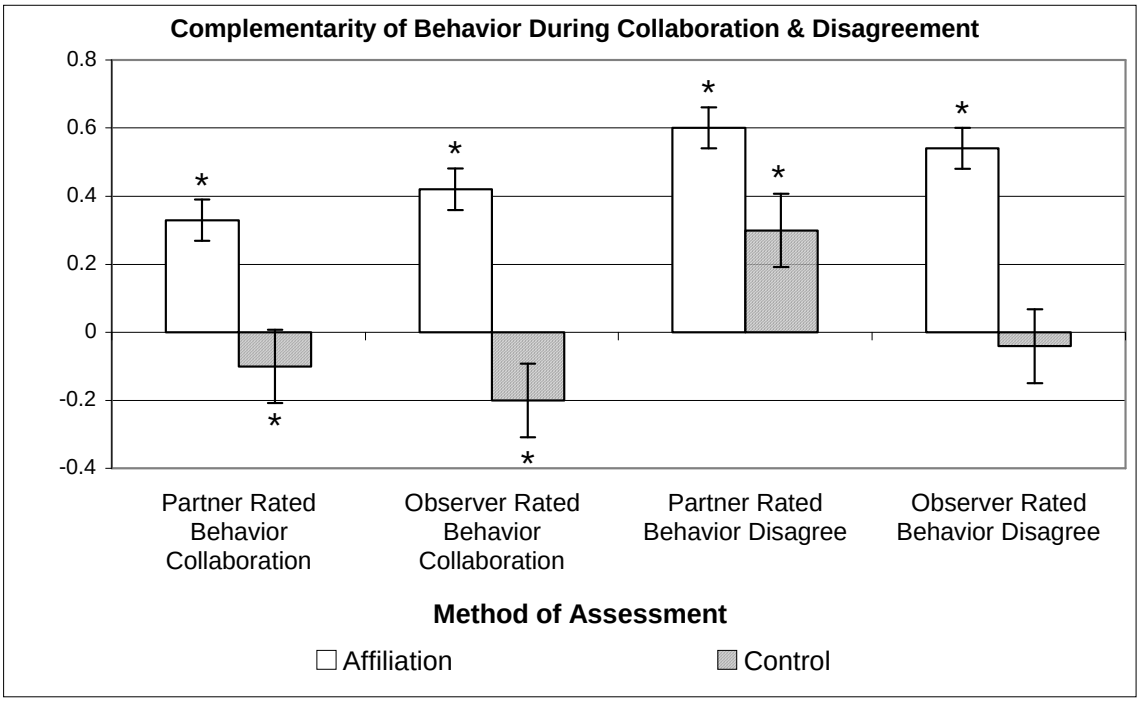


Figure 5. Evidence of moderation of complementarity in Study 2: Task and Method

(anxiety, anger, then Relationship Quality). Within each dependent variable, again results are presented by actor, partner, and then interaction effects.

Partner Ratings

Collaboration

Using partner reports of behavior during collaboration (IMI-C ratings of partner affiliation and control), no full model for the affiliation dimension fit the data significantly better than its respective constrained, first-order effects only model (see Table 2). For control, the full model fit the data better when predicting anger (χ^2 difference = 10.72, $p < .01$), but not anxiety or Relationship Quality.

For anxiety, results revealed only significant partner effects. Both husbands and wives who rated their spouse as less affiliative during the collaboration task reported more anxiety in response to the task ($B = -.17$, $p < .001$ and $B = -.27$, $p < .01$, respectively).

Similarly for anger, husbands and wives who rated their spouse as less warm ($B = -.19$, $p < .01$ and $B = -.35$, $p < .001$, respectively) or more controlling ($B = .18$ and .19 respectively, both $p < .01$) also reported more anger in response to the collaborative task. The interaction between husbands' and wives' levels of control during the collaboration task was also significantly associated with both husbands' and wives' anger ($B = -.13$ and .14, respectively, both $p < .05$). For wives, high levels of control among wives during collaboration was associated with less anger only when she rated her husband low on control during the task, and was associated with more anger when she rated him as

also high on control during the task (see Figure 6, Panel A), a pattern consistent with predictions of complementarity theory. However, there was no significant difference in the impact of high and low husband control for wives who were low in behavioral control. Thus, though these results partially support complementarity theory, they appear to more accurately represent an increased sensitivity to husband control for wives who are also high on control during the interaction, as opposed to the benefits of reciprocity on the control dimension. Further, for husbands, high control among wives along with low control among husbands during collaboration (i.e., the combination associated with the least anger for wives) was associated with the *highest* levels of anger for husbands, a result which directly contradicts predictions of complementarity theory (see Figure 6, Panel B).

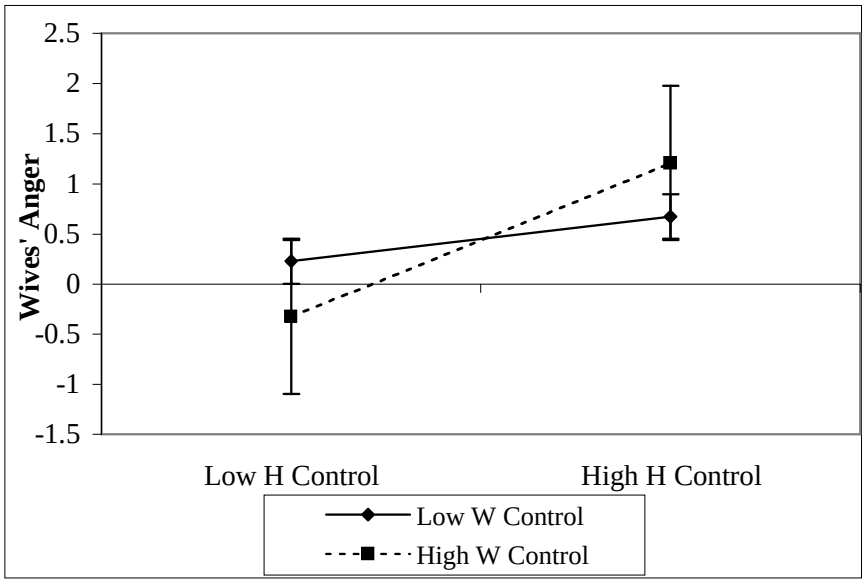
For relationship quality, both husbands and wives who were rated as more affiliative reported better relationship quality (B = .23 and .18, respectively, both p < .001), as did their spouses (B = .45 and .39, respectively, both p < .001). Additionally, both husbands and wives who were rated as less controlling reported better relationship quality (B = -.16 and -.18, respectively, both p < .01), as did their spouses (B = -.24 and -.27, respectively, both p < .001). The interaction between husbands' and wives' control was also associated with husbands' Relationship Quality (B = .12, p < .05; see Figure 5, Panel C), and this interaction represented the synergistic positive effects of low control such that husbands reported particularly high relationship quality when both they and their wives were rates low on control during the collaborative task.

Table 2. Partner Ratings of Behavior (IMI-C): Results of model comparisons and effect sizes for each outcome of interest in Study 2

Task & Outcome by Dimension	R^2 Constrained Model	R^2 Full Model	R^2 Δ	Model Comparison Results (χ^2 difference)	*p*
Collaborative Task					
Affiliation Dimension					
Husband anxiety	.03	.03	0	0.7	> .05
Wife anxiety	.07	.08	.01		
Husband anger	.04	.04	0	1.2	> .05
Wife anger	.11	.11	0		
Husband RQ	.26	.26	0	1.6	> .05
Wife RQ	.29	.29	0		
Control Dimension					
Husband anxiety	0	.01	.01	2.8	> .05
Wife anxiety	.01	.02	.01		
Husband anger	.02	.04	.02	10.7	**< .01**
Wife anger	.03	.05	.02		
Husband RQ	.09	.10	.01	5.1	> .05
Wife RQ	.08	.08	0		
Disagreement Task					
Affiliation Dimension					
Husband anxiety	.15	.15	0	3.5	> .05
Wife anxiety	.19	.20	.01		
Husband anger	.25	.25	0	5.9	> .05
Wife anger	.41	.42	.01		
Husband RQ	.35	.35	0	5.6	> .05
Wife RQ	.39	.40	.01		
Control Dimension					
Husband anxiety	.06	.07	.01	3.4	> .05
Wife anxiety	.15	.15	0		
Husband anger	.20	.20	0	7.1	**< .05**
Wife anger	.29	.30	.01		
Husband RQ	.20	.20	0	1.5	> .05
Wife RQ	.17	.17	0		

RQ = Relationship Quality. *p*-values less than .05 indicate incremental utility of the additional interaction paths above first-order effects of affiliation and control

Panel A*: Partner Ratings



Panel B: Partner Ratings

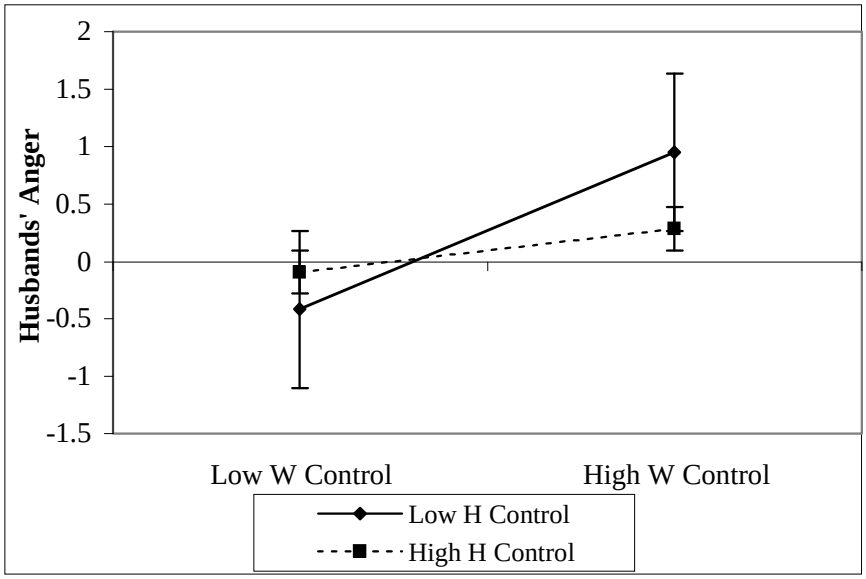
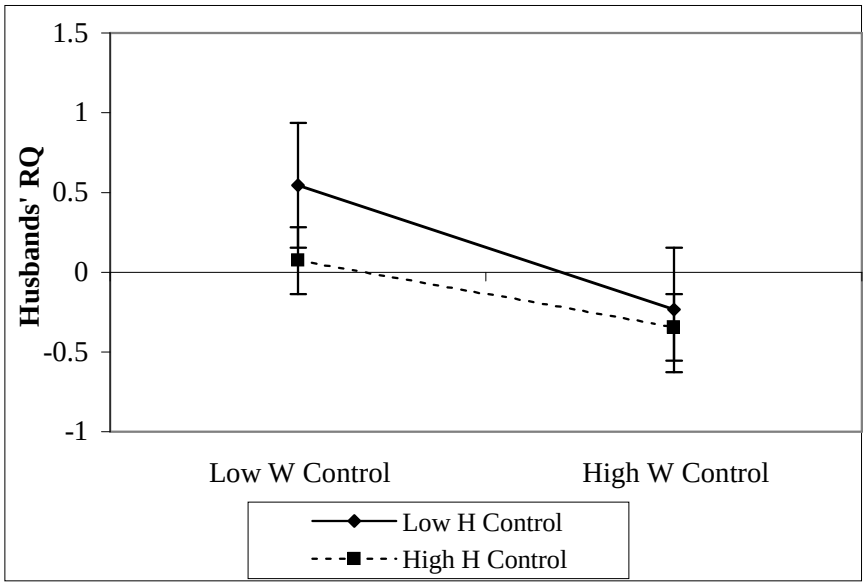


Figure 6. Visual representations of a sampling of significant interactions from Study 2. The first four panels depict behavior during the collaborative task and the last two panels depict behavior during the disagreement task. The asterisk by Panel A signifies that this interaction is partially consistent with predictions of complementarity theory.

Panel C: Partner Ratings



Panel D: Observer Ratings

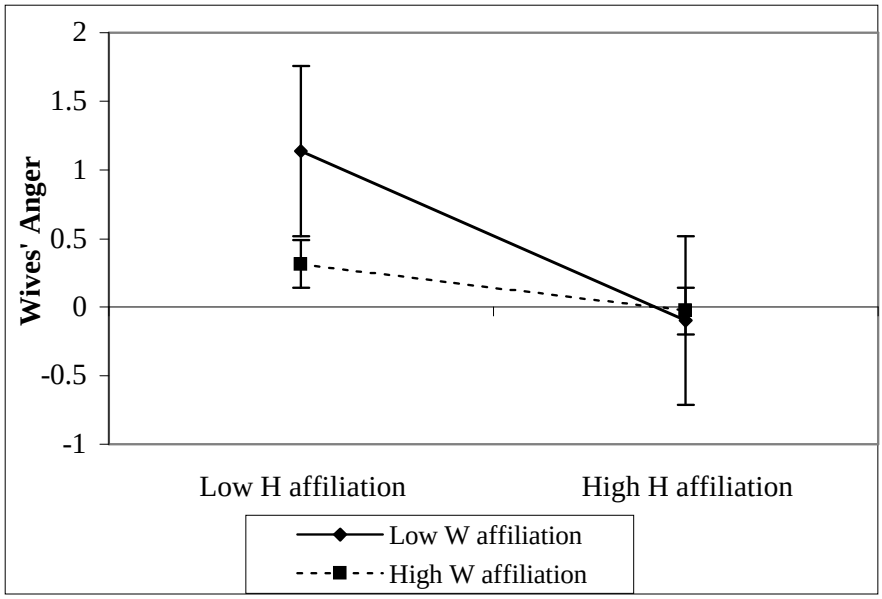
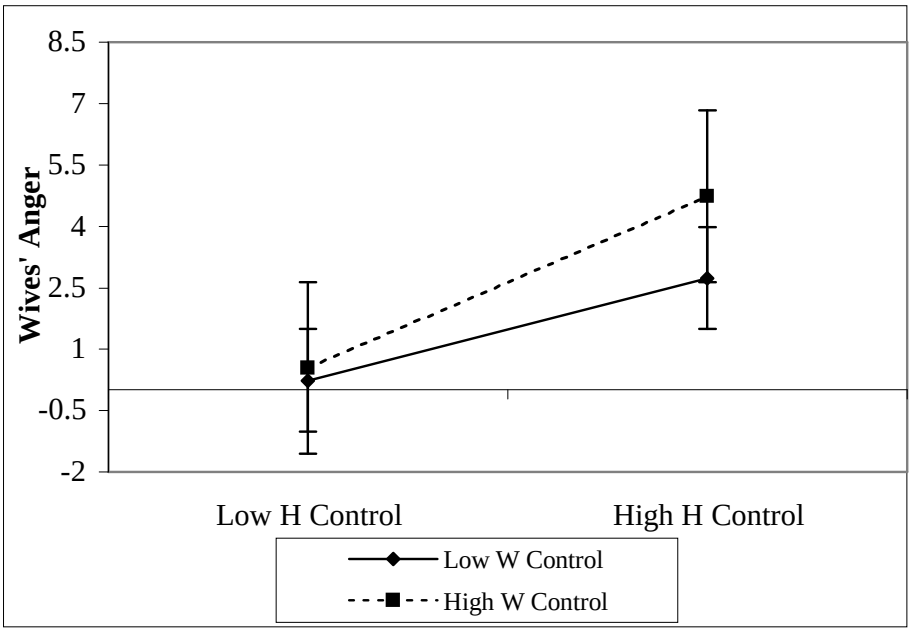


Figure 6. (Continued)

Disagreement Task

Panel E: Partner Ratings



Panel F: Partner Ratings

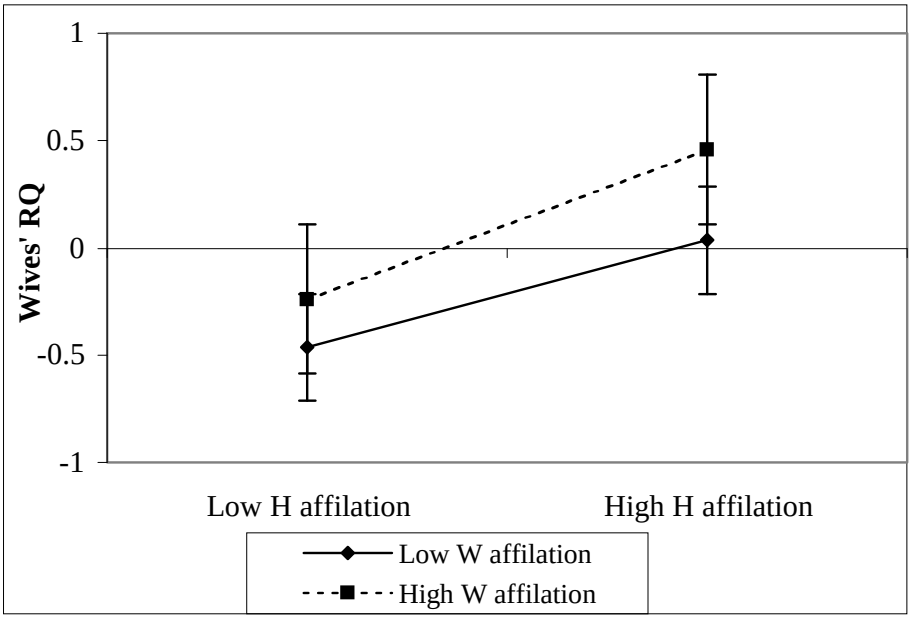


Figure 6. (Continued)

Disagreement

Using partner reports of behavior during disagreement (i.e., IMI-C ratings of partner affiliation and control), no full model for affiliation showed superior model fit (see Table 2). However, for the control dimension, the full model for anger did fit the data significantly better (χ^2 difference = 7.1, $p < .05$), though it did not for anxiety or Relationship Quality.

For anxiety, results revealed that husbands who were rated as less affiliative during the task also reported more anxiety in response to the task ($B = -.25$, $p < .001$). Additionally, when husbands and wives were rated as less affiliative ($B = -.45$, $p < .001$ and $B = -.18$, $p < .01$) or more controlling ($B = .34$ and .21, respectively, both $p < .001$), their spouses reported more anxiety during the disagreement.

Similarly for anger, husbands who were rated as less affiliative ($B = -.19$, $p < .01$) and both wives and husbands who were rates as more controlling ($B = .21$, $p < .001$ and $B = .14$, $p = .01$) during the disagreement also reported more anger in response to the task. Additionally, when husbands and wives were rated as less affiliative ($B = -.62$ and -.36, respectively, both $p < .001$) or more controlling ($B = .40$ and .34, respectively, both $p < .001$), their spouses reported more anger during the disagreement. The interaction between husbands' and wives' levels of control during the disagreement task was also significantly associated with wives' anger ($B = .15$, $p = .01$; see Figure 5, Panel E), such that high control by husbands was associated with particularly high levels of anger by wives when wives were also rated high on control. The interaction between spouses' levels of affiliation was also associated with wives' anger ($B = .11$, $p < .05$), such that

low affiliation by wives was associated with more anger only when she also rated her husband low on behavioral affiliation during the task (similar to Figure 6, Panel D).

Lastly, for relationship quality, both husbands and wives who were rated by their spouse as more affiliative (B = .19, p < .001 and B = .13, p < .05 respectively) or less controlling (B = -.18 and -.24, respectively, both $p \leq .001$) during the disagreement task reported higher relationship quality. Additionally, the spouses of husbands and wives who were rated as more affiliative (B = .54 and .45, respectively, both p < .001) or less controlling (B = -.27 and -.36, respectively, both p < .001), also reported higher overall relationship quality. The interaction between spouses' affiliation was significantly associated with wives' relationship quality (B = .11, p < .05; see Figure 5, Panel F), such that wives reported particularly high relationship quality when both partners were rated as warm.

Observer Ratings

Collaboration

Using aggregated SASB codes of spouses' behavioral control during the collaborative task no full model fit the data significantly better than its respective constrained model (Table 3). However, for behavioral affiliation, the full model for both anger and anxiety showed superior model fit (χ^2 difference = 6.54 and 6.15, respectively, both p < .01).

Results for anxiety revealed no actor or partner effects. However, the interaction between spouses' levels of affiliation was significantly associated with wives' anxiety (B = .18, p < .01), such that if both wives and their husbands were low in affiliation, they

reported particularly high levels of anxiety during collaboration (similar to Figure 5, Panel D).

For anger, husbands rated as less affiliative or more controlling reported more anger in response to the collaborative task (B = -.27, p < .001, and B = .14, p < .05, respectively). Additionally, wives of husbands who were rated as more affiliative also reported less anger during the task (B = -.14, p < .05). The interaction between spouses' levels of affiliation was significantly associated with wives' anger in response to the task (B = .18, p < .01), such that if both wives and their husbands were low in affiliation they reported particularly high levels of anger during collaboration (see Figure 5, Panel D), similar to the interaction for partner ratings.

For relationship quality, there was only one significant path indicating that husbands who were rated as more controlling also reported lower relationship quality (B = -.14, p < .05).

Disagreement

Using aggregated SASB codes of spouses' behavioral control and affiliation during the disagreement task, no full model fit the data significantly better than its respective constrained model (Table 3). Further, there were no significant interaction paths.

Results for anxiety revealed only one significant path – wives whose husbands were more controlling reported more anxiety (B = .16, p < .01). For anger, wives who were rated as less affiliative (B = -.26, p < .001) and both husbands and wives who were rated as more controlling (B = .22, p = .001 and B = .15, p < .01, respectively) reported more anger in

response to the disagreement task. Additionally, wives rated as less affiliative and husbands rated as more controlling were more likely to have a spouse who reported increased anger in response to the task (B = -.19, p = .01 and B = .22, p < .001, respectively). For Relationship Quality, significant paths were exactly the same as for anger. Wives and husbands who were rated as more affiliative (B = .37, p = .001 and B = .14, p < .05, respectively) and husbands who were rated as less controlling (B = -.25, p < .001) during the disagreement task reported higher overall Relationship Quality. Additionally, wives rated as more affiliative and husbands rated as less controlling were also more likely to have a spouse who reported higher Relationship Quality (B = .14, p < .05 and B = -.22, p < .001, respectively).

Discussion

These results generally replicate the results of Study 1, and extend those findings to older couples, independent behavioral observations, less structured interactions, and to a collaborative marital task. Results again demonstrated the presence of complementarity during marital interactions. However, we again found no support for the theory that complementarity significantly contributes to affective or relationship outcomes when first-order effects are appropriately included in analyses.

Both partner ratings and observer ratings of behavior during collaboration reveal complementarity on both axes. However, as in Study 1, only affiliative complementarity was observed during disagreement. Though observer ratings indicated no significant relationship between partners' controlling behaviors during disagreement, partner rating

Table 3. Observer Ratings of Behavior (SASB): Results of model comparisons and effect sizes for each outcome of interest in Study 2

Task & Outcome by Dimension	R^2 Constrained Model	R^2 Full Model	R^2 Δ	Model Comparison Results (χ^2 difference)	*p*
Collaborative Task					
Affiliation Dimension					
Husband anxiety	.02	.02	0	6.2	**< .05**
Wife anxiety	.01	.03	.02		
Husband anger	.06	.06	0	6.5	**< .05**
Wife anger	.02	.04	.02		
Husband RQ	0	.01	.01	2.3	> .05
Wife RQ	0	.01	.01		
Control Dimension					
Husband anxiety	.0	.01	.01	1.0	> .05
Wife anxiety	.01	.01	0		
Husband anger	.02	.03	.01	3.3	> .05
Wife anger	.01	.02	.01		
Husband RQ	.03	.03	0	2.9	> .05
Wife RQ	.01	.01	0		
Disagreement Task					
Affiliation Dimension					
Husband anxiety	.02	.03	.01	4.7	> .05
Wife anxiety	.04	.05	.01		
Husband anger	.05	.06	.01	1.5	> .05
Wife anger	.10	.10	0		
Husband RQ	.06	.07	.01	2.9	> .05
Wife RQ	.17	.17	0		
Control Dimension					
Husband anxiety	.02	.02	0	0.9	> .05
Wife anxiety	.03	.03	0		
Husband anger	.06	.06	0	0.5	> .05
Wife anger	.07	.07	0		
Husband RQ	.06	.07	.01	1.8	> .05
Wife RQ	.06	.06	0		

RQ = Relationship Quality. *p*-values less than .05 indicate incremental utility of the additional interaction paths above first-order effects of affiliation and control.

indicated significant anticomplementarity. Hence, across multiple methods of assessment (i.e., IMI-C partner ratings and SASB observer ratings), the collaborative, task-focused interactions produced greater complementarity along the control dimension (Figure 6).

As stated, these results also replicate that complementarity during marital interactions does not provide incremental utility above the first-order effects of affiliation and control in predicting concurrent anxiety and anger, or overall Relationship Quality.

Like Study 1, no significant interactions between partners' levels of affiliation or control took the form predicted by complementarity theory. However, in this study we found that one form of complementarity, high control by wives and low control by husbands, was associated with less anger reported by wives during the collaboration task (Figure 5, Panel B). We found some support for the synergistic, negative effects of high control (e.g., Figure 5, Panel F) as well as the synergistic, positive effects of low control (e.g., Figure 5, Panel C). We also found support for the synergistic, negative effects of low affiliation (e.g., Figure 5, Panel D), as well as synergistic, positive effects of high affiliation (e.g., Figure 5, Panel E). Again, affective and relationship outcomes appear more directly attributable to spouses' levels (and perhaps synergism) of affiliation and control as opposed to complementarity. Notably, Table 2 also indicates that in our sample spouses' behavior during disagreement appear to be more predictive of relationship quality than behavior during collaboration. Further, comparingTable 2 with Table 3 suggests that partner ratings capture a larger percentage of variance in outcomes than observer ratings.

CHAPTER IV

GENERAL DISCUSSION

Despite the central role of marriage in the lives of most adults, few studies to date have examined complementarity – a central tenet of interpersonal theory – in the context of marriage. The studies reported here provide an important extension of prior research in this regard, and the results support several important conclusions. First, the results provide strong evidence for the presence of affiliative complementarity in marital relationships, across relationships of widely differing lengths, methods of assessment (i.e. self-reports, spouse ratings, observer ratings), and contexts. Consistent with prior reviews of complementarity in other dyads (Orford, 1986), complementarity along the control axis was generally weaker and less consistent. Hence, complementarity provides a fairly accurate account of affiliative behavior in married couples, but does not provide a reliable account of partners' levels of control.

The results also provide evidence of potential moderators of complementarity along the control axis. Control complementarity was more apparent in marital interactions with a warmer tone (Figure 3) and during task-focused situations (collaboration; see Figure 6), again results consistent with past research examining nonromantic dyads (Orford, 1986; Tiedens et al., 2007). We also found in both younger and older couples that partner reports of behavior indicate strong anticomplementarity (e.g., contested control) during disagreement, suggesting that the principle of complementarity may not apply to interactions in which partners disagree, and perhaps

especially about aspects of a shared relationship. We suspect that self-presentational concerns may account for the fact that this potentially unflattering pattern of behaviors (i.e., contested control) is present in partner ratings but not self-reports.

Further, the concept of complementarity in interpersonal theory provides not only an account of expected patterns of social interaction, but also predictions about the affective consequences of interactions and about relationship quality. Simply put, higher degrees of complementarity are expected to contribute to better interaction and relationship outcomes. In the present studies, although we found strong evidence of affiliative complementarity and some evidence for control complementarity at least in some situations, in no case did we find that complementarity was related to anxiety or anger during those interactions, or overall Relationship Quality. That is, although complementarity was often present and even pronounced, it did not predict how spouses felt about interactions or their relationship in general beyond the first-order effects (i.e., levels) of affiliation and control.

Hence, although warm and hostile behaviors are often reciprocated, reduction of negative affect does not appear to be the mechanism reinforcing this transactional pattern, as proposed by some interpersonal theorists. Further, the extent to which reciprocation occurs appears to have little if anything to do with the quality of marital relationships, beyond the couple's level of warmth versus hostility. Instead, lack of warmth, presence of hostility, and, perhaps to a lesser extent, the presence of control are associated with negative affect and lower relationship quality, regardless of the "match" or "mismatch" of these interpersonal behaviors. In this way, the complementarity principle provides a

useful account of patterns of affiliative behavior in couples, but less useful accounts of their levels of control or the effects of interactional behavior on momentary affect and relationship quality.

Limitations

There are notable limitations to the studies reported here. First, participants were mostly White and upper SES couples, and findings may not generalize to other populations. Second, these studies were cross-sectional and thus no causal conclusions can be drawn. However, the pattern of cross-sectional associations did not support predictions based on the principle of complementarity, and thus the point of directionality is moot as no relationship appears to exists. Third, the behavioral interactions of couples in the laboratory may not resemble closely their interactions outside of the laboratory (but, see Heyman, 2001, p.6). Fourth, we did not analyze complementarity in moment-to-moment sequences of behavior, which is arguably the most stringent test of interpersonal complementarity, as this was not possible with our data. However, observer ratings of behavior in Study 2 were collected in a minute-to-minute fashion and then aggregated statistically, and, hence, do represent discrete behavioral "snapshots" and not simply a report of observer's overall "impression" of partners' behavior during the interactions.

Future Directions

These findings have implications for both interpersonal theory and for the study of marriage and perhaps similar close relationships. In terms of interpersonal theory, these findings provide novel evidence indicating that complementarity along the

affiliation axis of the IPC characterizes marital interactions and relationships to a considerable degree. However, the expected complementarity along the control axis is a weaker and more variable phenomenon, suggesting that marital interactions are not necessarily characterized by one partner leading and the other following. The present results suggest the possibility that during disagreements, conflicts, and other negative marital interactions, the "invitation" to submit conveyed by a spouse's dominant behavior may be unwelcome, resulting in low levels of complementarity or even significant anti-complementarity. The latter may represent contested dominance or struggles for control in the relationship. Future research and refinements concerning the complementarity principle in interpersonal theory should focus on the factors that moderate the degree of complementarity along the control dimension or perhaps redefining what complementary responses are along this axis (for examples of such efforts see Horowitz et al., 2006 and Benjamin, 1974).

Importantly, the consistent finding that complementarity was not associated with lower levels of negative affect or higher levels of relationship satisfaction challenges the tenets of IPC-based interpersonal theory regarding the predicted results of complementary interactions. Our results indicate that the complementarity principle may provide an accurate description of marital behavior regarding the affiliation dimension of the IPC, but not an accurate explanation of why this behavioral pattern is maintained or the outcomes associated with it, suggesting a need to modify interpersonal theory regarding the consequences of complementarity and the factors that maintain it. The results also indicate that future studies of complementarity in marriage and similar

relationships must clearly separate the specific effects of complementarity from its component parts – overall levels of affiliation and control.

Regarding marital theory and research, these results support prior models and evidence suggesting that couples' levels of warmth versus hostility tend to be reciprocally determined, maintained, and often magnified over time (Gottman, Swanson, & Swanson, 2002). The results also support prior findings that couples' levels of warmth and hostility are important influences on affective experience and relationship quality (Snyder et al., 2005). Further, although the affiliation dimension typically receives more emphasis in marital theory and research than does control, the current findings support prior suggestions of the importance of this dimension (Ehrensaft et al., 1999; Gray-Little & Burks, 1983; Sanford, 2010).

If reciprocated levels of warm and hostile behavior characterize marital interactions and relationships with important implications for health and well-being, mechanisms underlying these patterns are important topics for future research. Again, the present results suggest that reductions in negative affect and enhancement of relationship satisfaction do not provide a viable account of the consistent finding that affiliative behavior tends to be reciprocated, as complementarity was not associated with negative affect or Relationship Quality above first-order effects. Perhaps instead of the reinforcement mechanism described by some complementarity theorists, correspondence on the affiliation axis of social behavior may be a basic interpersonal "reflex" or response tendency, as suggested by Leary (1957). Judgments of other's behavior on this dimension is a basic and universal component of social cognition (Fiske, Cuddy, & Glick, 2007),

and the tendency to react with similar levels of affiliation may be a similarly basic response (Rizzolatti & Craighero, 2004). If so, in efforts to improve relationship quality or understand its determinants, the origins of reciprocated hostility in marriage may be less important than are the ability to suppress or defuse the urge to reciprocate hostility and related self-regulation skills (Salvatore et al., 2011; Smith et al., 2011). In short, the tendency toward correspondence between partners' levels of hostility may be relatively automatic, and the ability to overcome this robust form of complementarity may be an important determinant of relationship quality and, in turn, health.

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